

WHAT IS CLAIMED IS:

1. An image formation apparatus for forming images on sheets fed at a sheet feeding interval from a sheet supplying device positioned relative to the image formation apparatus, said image formation apparatus comprising:

a sheet transporting unit transporting said sheets fed from said sheet supplying device;

an image formation unit forming images on said sheets transported by said sheet transporting unit; and

a receiving unit receiving information on said sheet feeding interval from said sheet supplying device;

wherein said sheet transporting unit, responsive to said information on said sheet feeding interval, transports said sheets at said sheet feeding interval.

2. An image formation apparatus according to Claim 1, wherein the information on the sheet feeding interval includes information on number of sheets remaining in the sheet supplying device.

3. An image formation apparatus according to Claim 2, wherein in a case where the number of sheets remaining in the sheet supplying device is greater than a predetermined number of sheets, the receiving unit receives information on

a first sheet feeding interval, and the sheet transporting unit transports the sheets at said first sheet feeding interval; and

wherein in a case where the number of sheets remaining in said sheet supplying device is less than or equal to said predetermined number of sheets, the receiving unit receives information on a second sheet feeding interval longer than said first sheet feeding interval, and the transporting unit transports said sheets at said second sheet feeding interval.

4. An image formation apparatus according to Claim 3, wherein the image formation unit comprises:

a plurality of image-carrying members, each image-carrying member carrying one color of a plurality of color toner images;

an intermediate transfer member facilitating primary image transfer by contacting said plurality of image-carrying members for transferring said plurality of color toner images onto said intermediate transfer member;

a transfer unit facilitating secondary image transfer by transferring said plurality of color toner images from said intermediate transfer member onto a sheet; and

wherein said image formation unit receives information on whether a sheet remains in said sheet supplying device in

a case where the receiving unit receives the information on the second sheet feeding interval, and responsive to said information on whether the sheet remains, initiates primary image transfer onto the intermediate transfer member.

5. An image formation apparatus according to Claim 1, further comprising:

a determining unit determining the position of the sheet supplying device relative to said image formation apparatus; and

a transmission unit transmitting information on the sheet feeding interval to the sheet supplying device in the event that said determining unit has determined that the position of said sheet feeding device is a predetermined connection position.

6. An image formation apparatus according to Claim 5, wherein the determining unit determines a detachable mounting position of the sheet supplying device to said image formation apparatus, and wherein the transmission unit transmits the information on the sheet feeding interval to said sheet supplying device in the event that said determining unit determined that the position of said sheet feeding device is the predetermined connection position.

7. An image formation method for an image formation apparatus and a sheet supplying device positioned relative thereto and feeding sheets to said image formation apparatus at a sheet feeding interval, said method comprising the steps of:

    querying said sheet supplying device for information regarding said sheet feeding interval;

    receiving said information regarding said sheet feeding interval from said sheet supplying device in response to said querying step;

    transporting the sheets fed from said sheet supplying device at the sheet feeding interval received in said receiving step; and

    forming an image on the sheets transported in said transporting step.

8. An image formation method according to Claim 7, wherein the information regarding said sheet feeding interval includes information on remaining number of sheets loaded on said sheet supplying device.

9. An image formation method according to Claim 8, wherein the step of receiving said information regarding said sheet feeding interval includes receiving information regarding a first sheet feeding interval in a case where the

remaining number of sheets loaded on said sheet supplying device is greater than a predetermined number of sheets, and receiving information regarding to a second sheet feeding interval longer than said first sheet feeding interval in a case where the remaining number of sheets loaded on said sheet supplying device is less than or equal to said predetermined number of sheets; and

wherein the step of transporting said sheets fed from said sheet supplying device further includes transporting said sheets at said first or second sheet feeding intervals responsive to receiving said information regarding the first or second sheet feeding intervals, respectively.

10. An image formation method according to Claim 9, wherein the step of receiving said information regarding said sheet feeding interval includes receiving information regarding whether a sheet is detected on said sheet supplying device;

wherein the step of forming the image includes:

transferring a plurality of color toner images from a plurality of image-carrying members, each image-carrying member carrying one color of said plurality of color toner images, onto an intermediate transfer member;

transferring said plurality of color toner images from said intermediate transfer member onto a sheet; and

wherein subsequent to the step of receiving the information regarding the second sheet feeding interval, said step of forming the image is performed subsequent to said step of receiving said information regarding detecting a sheet loaded on said sheet supplying device.

11. An image formation method according to any one of Claims 7 through 10, further comprising the following steps:

determining the position of the sheet supplying device relative to the image formation apparatus; and

determining whether said position of the sheet supplying device is a predetermined position, and if so, transmitting said sheet feeding interval to said sheet supplying device.

12. An image formation method according to Claim 11, wherein the step of determining the position of the sheet supplying device includes determining a detachable mounting position of the sheet supplying device to the image formation apparatus, and further including determining whether said detachable mounting position is the predetermined position, and if so, transmitting said sheet feeding interval to said sheet supplying device.

13. A sheet supplying device for feeding sheets to an

image formation apparatus for forming images on said fed sheets, said sheet supplying device comprising:

a sheet loading unit loading sheets thereon;

a sheet feeding unit feeding sheets loaded on said sheet loading unit;

a sensor outputting information on remaining number of sheets loaded on said sheet loading unit;

a control unit controlling a feeding interval of sheets from said sheet feeding unit; and

a transmitting unit transmitting information on said feeding interval of said sheets to the image formation apparatus;

wherein said control unit controls said feeding interval of said sheets based on information on the number of remaining sheets.

14. A sheet supplying device according to Claim 13, wherein the control unit controls the feeding interval at a first sheet interval in a case where the information on the remaining number of sheets is greater than a predetermined number of sheets, and controls the feeding interval at a second sheet interval longer than said first sheet interval in a case where said information on the remaining number of sheets is less than or equal to said predetermined number of sheets.

15. A sheet supplying device according to Claim 13, further comprising a receiving unit receiving from the image formation apparatus signals requesting transmission of information on the feeding interval of sheets; and wherein the transmitting unit transmits said information on said feeding interval responsive to said signals.

16. An image formation system including an image formation apparatus and a sheet supplying device positioned relative to said image formation apparatus, said sheet supplying device feeding said image formation apparatus sheets at a sheet feeding interval, said image formation apparatus comprising:

a sheet transporting unit transporting said sheets fed from said sheet supplying device at the sheet feeding interval;

an image formation unit forming images on said sheets transported by said sheet transporting unit;

a receiving unit receiving information on said sheet feeding interval from said sheet supplying device; and

wherein said sheet transporting unit, responsive to said information on said sheet feeding interval, transports said sheets at said sheet feeding interval.



17. An image formation system according to Claim 16, wherein the information on the sheet feeding interval includes information on number of sheets remaining loaded on the sheet supplying device.

18. An image formation system according to Claim 17, wherein in a case where the number of sheets remaining loaded in the sheet supplying device is greater than a predetermined number of sheets, the receiving unit receives information on a first sheet feeding interval, and the sheet transporting unit transports the sheets at said first sheet feeding interval; and

wherein in a case where the number of sheets remaining loaded in said sheet supplying device is less than or equal to said predetermined number of sheets, the receiving unit receives information on a second sheet feeding interval longer than said first sheet feeding interval, and said transporting unit transports said sheets at said second sheet feeding interval.

19. An image formation system according to Claim 18, wherein the image formation unit comprises:

a plurality of image-carrying members, each image-carrying member carrying one color of a plurality of color

toner images,

an intermediate transfer member facilitating primary image transfer by contacting said plurality of image-carrying members for transferring said plurality of color toner images onto intermediate transfer member;

a transfer unit facilitating secondary image transfer by transferring said plurality of color toner images from said intermediate transfer member onto a sheet; and

wherein said image formation unit receives information on whether a sheet remains in said sheet supplying device in a case where the receiving unit receives the information on the second sheet feeding interval, and responsive to said information on whether the sheet remains, initiates primary image transfer onto the intermediate transfer member.

20. An image formation system according to Claim 16, wherein the image formation apparatus further comprising:

a determining unit determining the position of the sheet supplying device relative to the image formation apparatus; and

a transmission unit transmitting information on the sheet supplying interval to the sheet supplying device in the event that said determining unit determined that said position of said sheet feeding device is a predetermined

connection position.

21. An image formation system according to Claim 21, wherein the sheet supplying device is positioned detachably mounted to the image formation apparatus, wherein the determining unit determines said detachable mounting position of the sheet supplying device, and wherein the transmission unit transmits information on the sheet supplying interval to the sheet supplying device in the event that said determining unit determined that said detachable mounting position is the predetermined connection position.